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MAR 20 1968

CURRENT SERIAL RECORDS

WATER SUPPLY OUTLOOK FOR MONTANA

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE,
and
MONTANA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with Federal, State, and private organizations listed on the inside back cover of this report.

AS OF
MAR. 1, 1968

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season as they affect runoff will add to be an effective average. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1400 snow courses in Western United States and in the Columbia Basin in British Columbia. In the near future, it is anticipated that automatic snow water equivalent sensing devices along with radio telemetry will provide a continuous record of snow water equivalent at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

PUBLISHED BY SOIL CONSERVATION SERVICE

D. A. WILLIAMS, Administrator

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 507, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	P. O. Box "F", Palmer, Alaska 99645
Arizona	6029 Federal Building, Phoenix, Arizona 85205
Colorado (N. Mex.)	12417 Federal Building, Denver, Colorado 80202
Idaho	P. O. Box 38, Boise, Idaho 83707
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Building, Salt Lake City, Utah 84111
Washington	360 Federal Office Building, Spokane, Washington 99201
Wyoming	P. O. Box 340, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK FOR MONTANA

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

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ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON, D.C.



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In Cooperation with

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MONTANA WATER SUPPLY OUTLOOK
March 1, 1968

* * * * *

* The mountain snow pack is below average north of an *
* imaginary line from Missoula to Great Falls, and *
* above average elsewhere in the State. The snow *
* pack is dense. Soil moisture is average or above - *
* except in higher elevations of the Kootenai drain- *
* age. Late season irrigation supplies are expected *
* to be average over nearly all of the State. *
* * * * *

Columbia River Drainage

Snow - Mountain snow pack is below average over nearly all of the Columbia drainage in Montana and the Kootenai drainage in British Columbia.

Exceptions are headwaters of the Clark Fork where snow pack is above average.

Snow pack as percent of average by drainage is: Kootenai, 84; Flathead, 87; Bitterroot, 93; Upper Clark Fork, 110; Lower Clark Fork, 85. The snow pack is dense.

Soils in lower elevations are well primed from rains and snow melt. Soil moisture in the higher elevations is near average - except below average in the Kootenai drainage.

Streamflow - Runoff is forecast below last year except in the Bitterroot and Upper Clark Fork, where it is expected to be near or above last year. Runoff forecasts by drainages as compared to average are: Kootenai, 75-85; Flathead, 80-90; Bitterroot, 95-100; Upper Clark Fork, 105-115; Lower Clark Fork inflow, 75-85.

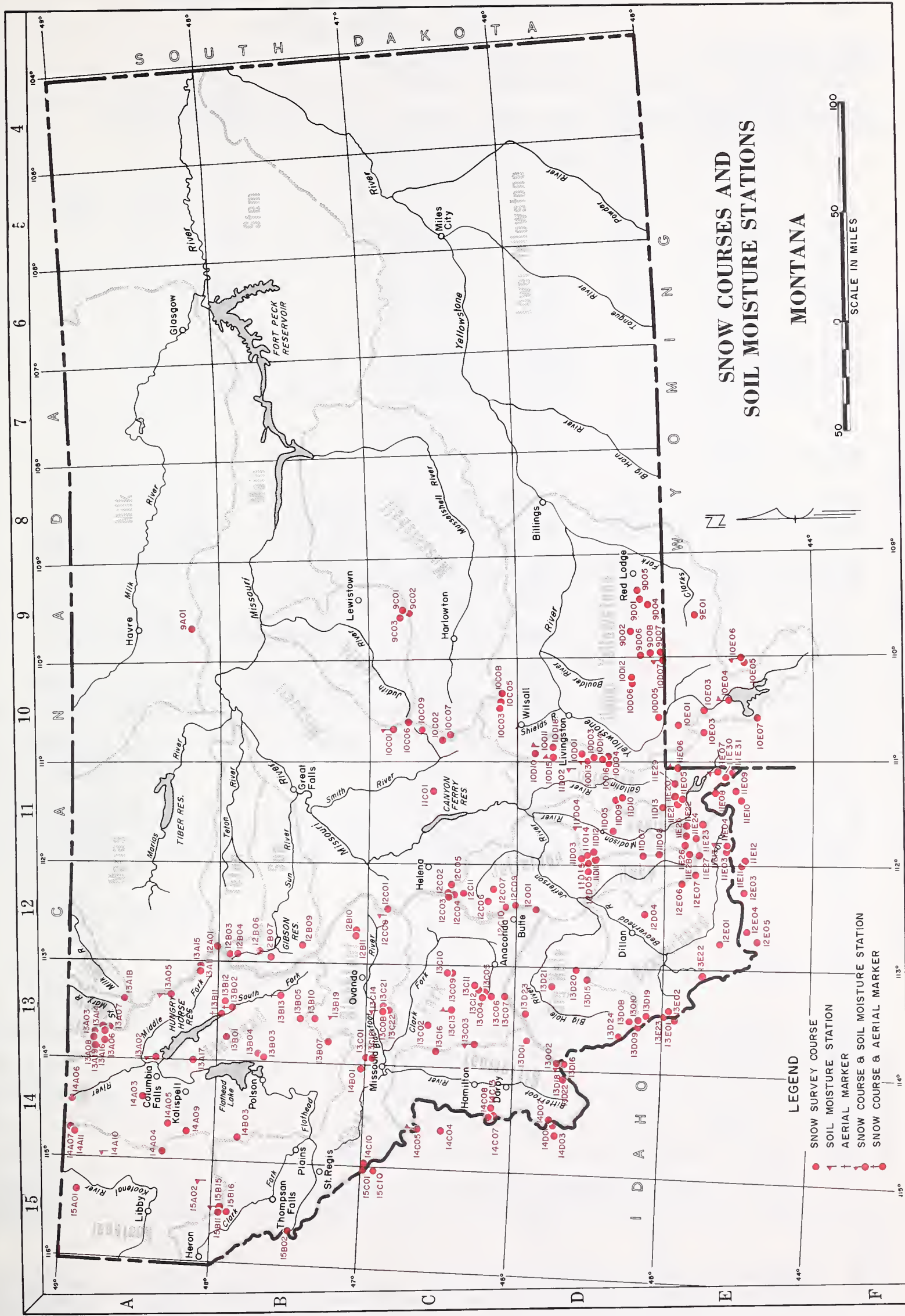
Missouri River Drainage

Snow - Snow cover is above average in all Missouri River drainages except Northwest. Areas north of the Dearborn and Sun Rivers have only 80 per-cent average snow pack. Record high to fourth highest of record snow water equivalent was measured on higher elevations of the Gallatin and southwest Missouri Main Stem drainages. Snow is dense. Soils under the snow pack are generally average or above.

Snow pack as percentage of average by drainage is: Jefferson, 121; Madison, 110; Gallatin, 146; Missouri Main Stem, 126; Sun-Marias-Teton-Milk, 82; Yellowstone, 126.

Streamflow - Runoff is forecast above average on all streams in the Missouri drainage except from the Northwest corner. Late season irrigation supplies from natural streamflow are expected to be average or above.

Reservoir storage will provide much of the late season supply for the lower runoff areas of the Northwest. Streamflow in the Upper Yellowstone is forecast above average. This will combine with below average flows from the Big Horn River for near average flow in the Lower Yellowstone. Runoff forecasts by drainages as compared to average are: Jefferson, 110-120; Madison, 115-125; Gallatin, 140-150; Missouri Main Stem tributaries, 125-150; streams north of Dearborn River, 75-90; Upper Yellowstone, 105-125; Big Horn in Wyoming, 90-95.



INDEX to MONTANA SNOW COURSES and SOIL MOISTURE STATIONS

SNOW COURSES

Drainage Basin & Course Name	Number	Elev.	Sec.	Typ.	Range	Record Begin	Measuring Dates	Meas. By	Drainage Basin & Course Name	Number	Elev.	Sec.	Typ.	Range	Record Begin	Measuring Dates	Meas. By
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COLUMBIA RIVER BASIN

KOOTENAI RIVER	15911	550	36	26N	31W	1954		UPPER YELLOWSTONE RIVER	Bad Ridge	10005	7500	11	4N	13E	1951	3,4,5	1	
	Shree Creek	15912	36	26N	32W	1965			Camp Senia	9001	7990	7	8S	18E	1937	3,4,5,5,6	1	
	Shree Midway	15913	36	26N	32W	1965			Cooke Station	9007	8150	19	9S	18E	1966	3,4,5	2	
	Shree Trail	15914	36	26N	32W	1965			Croville Mountain	9002	8100	12	9S	18E	1965	3,4,5	1	
	Shree Creek	15915	36	26N	32W	1965			Grizzly Park	9003	8100	11	9S	18E	1966	1,2,3,4,5,5,6	1,2	
	Shree Creek	15916	36	26N	32W	1965			Grizzly Park	9004	8100	26	7S	13E	1961	1,2,3,4,5	1,2	
	Shree Creek	15917	36	26N	32W	1965			Interference	10006	8000	22	7S	13E	1961	3,4,5	1	
	Shree Creek	15918	36	26N	32W	1965			Monument Park	10012	9000	22	7S	13E	1961	3,4,5	1	
	Shree Creek	15919	36	26N	32W	1965			Northern Entrance	10007	7400	33	9S	14E	1937	1,2,3,4,5,5,6	1,6	
	Shree Creek	15920	36	26N	32W	1965			Porcupine R.S.	10003	6500	10	4N	10E	1938	3,4,5	1	
FLATHEAD RIVER	14903	5150	11	24N	25W	1961		KOOTENAI RIVER	Barre Trail	15913M	3800	5	25N	30W	1964	Monthly	2	
	Beaver Lake	13411	5900	31	28N	11W	1964			Murphy Lake R.S.	14A10M	3000	5	34N	25W	1964	Monthly	2
	Big Creek	13412	4750	30	28N	11W	1964			Haven R.S.	15A02M	3550	2	26N	27W	1964	Monthly	2
	Big Creek	13413	4750	30	28N	11W	1964			Desert Mountain	13A02M	5600	24	31N	19W	1956	Monthly	1
	Big Creek	13414	4750	30	28N	11W	1964			Marina Pass	13A03M	5250	34	30N	14W	1950	Monthly	1
	Big Creek	13415	4750	30	28N	11W	1964			Clark Fork River	13C13M	7100	26	8N	15W	1965	Monthly	1
	Big Creek	13416	4750	30	28N	11W	1964			Black Pine	13C14M	4100	21	13N	15W	1961	Monthly	8
	Big Creek	13417	4750	30	28N	11W	1964			Lubrecht Forest	13C15M	4030	21	17N	15W	1963	Monthly	2
	Big Creek	13418	4750	30	28N	11W	1964			Skalkaho Summit	13C03M	7260	30	6N	17W	1964	Monthly	1
	Big Creek	13419	4750	30	28N	11W	1964			Yellowstone River								
MISSOURI RIVER BASIN	13010	7600	2	8S	15W	1959		MISSOURI RIVER BASIN	Madison River	11E13M	6700	23	14S	2W	1962	Monthly	10	
	Beaverhead River	13011	7600	2	8S	15W	1959			Red Bluff	11D04M	4800	7	3S	1E	1961	Monthly	7
	Beaverhead River	13012	7600	2	8S	15W	1959			Mont Yellowstone	11E07M	6700	34	13S	5N	1966	Monthly	6
	Beaverhead River	13013	7600	2	8S	15W	1959			Gallatin River	10D15M	7250	25	1N	6E	1965	Monthly	1
	Beaverhead River	13014	7600	2	8S	15W	1959			Bridgehead	11D02M	4850	18	2S	5E	1966	Monthly	1
	Beaverhead River	13015	7600	2	8S	15W	1959			College Silo	10D13M	6860	10	4S	6E	1965	Monthly	1
	Beaverhead River	13016	7600	2	8S	15W	1959			Lick Creek	11E06M	7150	1	11S	5E	1963	Monthly	6
	Beaverhead River	13017	7600	2	8S	15W	1959			Twenty-One Mile								
	Beaverhead River	13018	7600	2	8S	15W	1959			Missouri River Main Stem								
	Beaverhead River	13019	7600	2	8S	15W	1959			Yellowstone River								
SUN-TETON-MARIAS RIVERS	13020	7600	2	8S	15W	1959		SUN-TETON-MARIAS RIVERS	Dadger Pass	13A15	6900	4	27N	11W	1964	3,4,5	2	
	Beaverhead River	13021	7600	2	8S	15W	1959			Cabin Creek	12806	5200	33	23N	10W	1969	3,4,5	2
	Beaverhead River	13022	7600	2	8S	15W	1959			Five-Bull	12809	5700	25	20N	10W	1948	3,4,5	1
	Beaverhead River	13023	7600	2	8S	15W	1959			Freight Creek	12810	5700	30	28N	10W	1948	3,4,5	1
	Beaverhead River	13024	7600	2	8S	15W	1959			Gent Mountain	12807	5700	30	28N	10W	1948	3,4,5	1
	Beaverhead River	13025	7600	2	8S	15W	1959			Wrong Creek	12808	5700	30	28N	10W	1948	3,4,5	1
	Beaverhead River	13026	7600	2	8S	15W	1959			Wrong Ridge	12805	6800	17	25N	10W	1949	3,4,5	2
	Beaverhead River	13027	7600	2	8S	15W	1959			Judith River								
	Beaverhead River	13028	7600	2	8S	15W	1959			Anahecho	9002	7100	24	12N	17E	1966	3,4,5	1
	Beaverhead River	13029	7600	2	8S	15W	1959			Crystal Lake	9001	6100	19	12N	18E	1941	3,4,5	1
MISSOURI RIVER BASIN	13030	7600	2	8S	15W	1959		MISSOURI RIVER BASIN	Beaverhead River	13031	7600	2	8S	15W	1959	3,4,5	1	
	Beaverhead River	13031	7600	2	8S	15W	1959			Beaverhead River	13032	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13032	7600	2	8S	15W	1959			Beaverhead River	13033	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13033	7600	2	8S	15W	1959			Beaverhead River	13034	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13034	7600	2	8S	15W	1959			Beaverhead River	13035	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13035	7600	2	8S	15W	1959			Beaverhead River	13036	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13036	7600	2	8S	15W	1959			Beaverhead River	13037	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13037	7600	2	8S	15W	1959			Beaverhead River	13038	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13038	7600	2	8S	15W	1959			Beaverhead River	13039	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13039	7600	2	8S	15W	1959			Beaverhead River	13040	7600	2	8S	15W	1959	3,4,5	1
MISSOURI RIVER BASIN	13040	7600	2	8S	15W	1959		MISSOURI RIVER BASIN	Beaverhead River	13041	7600	2	8S	15W	1959	3,4,5	1	
	Beaverhead River	13041	7600	2	8S	15W	1959			Beaverhead River	13042	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13042	7600	2	8S	15W	1959			Beaverhead River	13043	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13043	7600	2	8S	15W	1959			Beaverhead River	13044	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13044	7600	2	8S	15W	1959			Beaverhead River	13045	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13045	7600	2	8S	15W	1959			Beaverhead River	13046	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13046	7600	2	8S	15W	1959			Beaverhead River	13047	7600	2	8S	15W	1959	3,4,5	1
MISSOURI RIVER BASIN	13047	7600	2	8S	15W	1959		MISSOURI RIVER BASIN	Beaverhead River	13048	7600	2	8S	15W	1959	3,4,5	1	
	Beaverhead River	13048	7600	2	8S	15W	1959			Beaverhead River	13049	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13049	7600	2	8S	15W	1959			Beaverhead River	13050	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13050	7600	2	8S	15W	1959			Beaverhead River	13051	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13051	7600	2	8S	15W	1959			Beaverhead River	13052	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13052	7600	2	8S	15W	1959			Beaverhead River	13053	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13053	7600	2	8S	15W	1959			Beaverhead River	13054	7600	2	8S	15W	1959	3,4,5	1
MISSOURI RIVER BASIN	13054	7600	2	8S	15W	1959		MISSOURI RIVER BASIN	Beaverhead River	13055	7600	2	8S	15W	1959	3,4,5	1	
	Beaverhead River	13055	7600	2	8S	15W	1959			Beaverhead River	13056	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13056	7600	2	8S	15W	1959			Beaverhead River	13057	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13057	7600	2	8S	15W	1959			Beaverhead River	13058	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13058	7600	2	8S	15W	1959			Beaverhead River	13059	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13059	7600	2	8S	15W	1959			Beaverhead River	13060	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13060	7600	2	8S	15W	1959			Beaverhead River	13061	7600	2	8S	15W	1959	3,4,5	1
MISSOURI RIVER BASIN	13061	7600	2	8S	15W	1959		MISSOURI RIVER BASIN	Beaverhead River	13062	7600	2	8S	15W	1959	3,4,5	1	
	Beaverhead River	13062	7600	2	8S	15W	1959			Beaverhead River	13063	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13063	7600	2	8S	15W	1959			Beaverhead River	13064	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13064	7600	2	8S	15W	1959			Beaverhead River	13065	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13065	7600	2	8S	15W	1959			Beaverhead River	13066	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13066	7600	2	8S	15W	1959			Beaverhead River	13067	7600	2	8S	15W	1959	3,4,5	1
	Beaverhead River	13067	7600	2	8S	15W	1959			Beaverhead River	13068	7600	2	8S	15W	1959	3,4,5	1

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1968

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW	
					LAST YEAR*	AVERAGE

COLUMBIA RIVER BASIN

3020	FISHER RIVER Jennings (near)	Apr-Sept	228	72		318
		Apr-July	217	72		302
3030	KOOTENAI RIVER Libby (at)	Apr-Sept	6700	83	9068	8096
		Apr-July	5820	83	8075	7010
3045	YAAK RIVER Troy (near)	Apr-Sept	480	86		555
		Apr-July	460	86		532
3050	KOOTENAI RIVER Leonia (at)	Apr-Sept	7550	81	10045	9327
		Apr-July	6600	81	8996	8179
3235	GERMAN GULCH Ramsay (near)	Apr-Sept	14.3	114	18.9	12.5
		Apr-July	13.2	114	17.5	10.2
3241	RACETRACK CREEK Anaconda (near)	Apr-Sept	40.5	106	37.4	38.0
		Apr-July	32.7	106	30.5	30.7
3301	FLINT CREEK Boulder Creek (below)(3)	Apr-Sept	81.5	111	74.3	73.0
		Apr-July	65.5	111	58.7	59.1
3320	MIDDLE FORK ROCK CREEK Philipsburg (near)	Apr-Sept	89.5	115		77.8
		Apr-July	81.0	115		70.5
3355	NEVADA CREEK Finn (near)	Apr-Sept	21.5	94		22.8
		Apr-July	20.1	94		21.3
3400	BLACKFOOT RIVER Bonner (near)	Apr-Sept	1070	103	1167	1036
		Apr-July	966	103	1072	938
		Apr-June	836	103	915	812
3404	CLARK FORK RIVER Milltown (above)(4)	Apr-Sept	900	112	879	802
		Apr-July	790	112	790	705
		Apr-June	678	112	677	605
3405	CLARK FORK RIVER Missoula (above)	Apr-Sept	1970	107	2061	1838
		Apr-July	1760	107	1876	1642
		Apr-June	1515	107	1606	1417
3410	RATTLESNAKE CREEK Missoula (at)	Apr-Sept	72.2	106	68.2	68.2
		Apr-July	70.0	106	67.3	65.9

(3) Sum Flint Creek at Maxville and Boulder Creek at Maxville.

(4) Difference in observed flow Clark Fork above Missoula and Blackfoot near Bonner.

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1968

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	(1000 Acre Feet) MEASURED FLOW	
					LAST YEAR*	AVERAGE
3425	WEST FORK BITTERROOT RIVER Conner (near)(5)	Apr-Sept	176	98		179
		Apr-July	165	98		168
3434	EAST FORK BITTERROOT RIVER Conner (near)	Apr-Sept	165	98		169
		Apr-July	151	98		154
3440	BITTERROOT RIVER Darby (near)	Apr-Sept	560	96	575	582
		Apr-July	520	96	540	542
		Apr-June	458	96	476	478
3465	SKALKAHO CREEK Hamilton (near)	Apr-Sept	61.0	101		60.6
		Apr-July	54.5	101		53.9
3475	BLODGETT CREEK Corvallis (near)	Apr-Sept	43.2	97	41.0	44.6
		Apr-July	41.2	97	39.4	42.6
3528	BITTERROOT RIVER Missoula (at)(6)	Apr-Sept	1525	98		1553
		Apr-July	1415	98		1446
		Apr-June	1230	98		1253
3530	CLARK FORK RIVER Missoula (below)	Apr-Sept	3495	103		3391
		Apr-July	3180	103		3088
		Apr-June	2750	103		2670
3540	ST. REGIS RIVER St. Regis (near)	Apr-Sept	283	78		363
		Apr-July	270	78		346
3545	CLARK FORK RIVER St. Regis (at)	Apr-Sept	4500	97	4758	4642
		Apr-July	4100	97	4380	4230
		Apr-June	3560	97	3768	3671
3555	NORTH FORK FLATHEAD RIVER Columbia Falls (near)	Apr-Sept	1580	78	2143	2027
		Apr-July	1440	78	1980	1844
		Apr-June	1220	78	1653	1565
3585	MIDDLE FORK FLATHEAD RIVER West Glacier (near)	Apr-Sept	1630	85	2185	1923
		Apr-July	1515	85	1945	1785
		Apr-June	1290	85	1604	1521
3625	SOUTH FORK FLATHEAD RIVER Columbia Falls (near)(7)	Apr-Sept	2080	87	2590	2381
		Apr-July	1970	87	2494	2262
		Apr-June	1735	87	2175	1988

(5) Adjusted for storage in Painted Rocks Reservoir.

(6) Difference in observed flow Clark Fork above and below Missoula.

(7) Adjusted for storage in Hungry Horse Reservoir.

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1968

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST	FORECAST	PERCENT	MEASURED FLOW	
		PERIOD	THIS YEAR	AVERAGE	LAST YEAR*	AVERAGE
3630	FLATHEAD RIVER Columbia Falls (at)(7)	Apr-Sept	5450	84	6972	6497
		Apr-July	5060	84	6491	6028
		Apr-June	4350	84	5428	5185
3700	SWAN RIVER Big Fork (near)	Apr-Sept	612	88		694
		Apr-July	540	88		614
		Apr-June	442	88		503
3720	FLATHEAD RIVER Polson (near)(8)	Apr-Sept	6460	83	7687	7778
		Apr-July	6000	83	7273	7229
		Apr-June	5140	83	6094	6188
3890	CLARK FORK RIVER Plains (near)(8)	Apr-Sept	11260	88	12838	12793
		Apr-July	10370	88	11984	11736
		Apr-June	8850		10122	10077
3895	THOMPSON RIVER Thompson Falls (near)	Apr-Sept	236	78		302
		Apr-July	184	78		273
3907	PROSPECT CREEK Thompson Falls (at)	Apr-Sept	165	80		165
		Apr-July	155	80		155
3920	CLARK FORK RIVER Whitehorse Rapids (at)(9)	Apr-Sept	12560	87		14398
		Apr-July	11450	87		13187
		Apr-June	9860	87		11318

(7) Adjusted for storage in Hungry Horse Reservoir.

(8) Adjusted for storage in Hungry Horse Reservoir and Flathead Lake.

(9) Adjusted for storage in Hungry Horse, Flathead Lake and Noxon Rapids Reservoirs.

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1968

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	(1000 Acre Feet) MEASURED FLOW	
					LAST YEAR*	AVERAGE

MISSOURI RIVER BASIN

RED ROCK RIVER

0125	Monida (near)(11)	Apr-Sept	86.5	110	110	78.4
		Apr-July	81.2	110	100	73.7

BEAVERHEAD RIVER

0154	Armstead (near)(11)(12)	Apr-Sept	116	105	142	111
		Apr-July	98.0	105	140	93.0

RUBY RIVER

0195	Alder (near)	Apr-Sept	95.0	119		79.6
		Apr-July	79.2	119		66.4

BIG HOLE RIVER

0255	Melrose (near)	Apr-Sept	820	114		718
		Apr-July	764	114		669

BIRCH CREEK

0260	Glen (near)	Apr-Sept	14.9	121	18.4	12.3
		Apr-July	13.1	121	15.8	10.8

BOULDER RIVER

0330	Boulder (near)	Apr-Sept	96.0	126		76.3
		Apr-July	92.0	126		73.0

JEFFERSON RIVER

0345	Sappington (at)(12)	Apr-Sept	1150	118		974
		Apr-July	1030	118		875

WILLOW CREEK

0350	Harrison (near)	Apr-Sept	18.0	127		14.2
		Apr-July	165	127		13.0

MADISON RIVER

0375	West Yellowstone (near)	Apr-Sept	238	114	269	208
		Apr-July	179	114	209	157

MADISON RIVER

0385	Grayling (near)(13)	Apr-Sept	500	119	586	420
		Apr-July	392	119	474	330

MADISON RIVER

0410	McAllister (near)(14)	Apr-Sept	860	120	996	718
		Apr-July	690	120	801	576

GALLATIN RIVER

0435	Gateway (near)	Apr-Sept	630	141		447
		Apr-July	550	141		381

BRIDGER CREEK

0485	Bozeman (near)	Apr-Sept	29.2	147		19.9
		Apr-July	27.5	147		18.7

(11) Adjusted for storage in Lima Reservoir.

(12) Adjusted for storage in Clark Canyon Reservoir.

(13) Adjusted for storage in Hebgen Lake.

(14) Adjusted for storage in Hebgen and Ennis Lakes.

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1968

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	(1000 Acre Feet) MEASURED FLOW	
					LAST YEAR*	AVERAGE
0500	HYALITE CREEK Bozeman (near)(15)	Apr-Sept	50.5	142		35.6
		Apr-July	43.6	142		30.8
0525	GALLATIN RIVER Logan (at)	Apr-Sept	714	153		467
		Apr-July	605	153		396
0545	MISSOURI RIVER Toston (at)(16)	Apr-Sept	2640	123		2147
		Apr-July	2290	123		1861
0615	PRICKLY PEAR CREEK Clancy (near)	Apr-Sept	28.3	129		22.0
		Apr-July	24.6	129		19.0
0735	DEARBORN RIVER Craig (near)	Apr-Sept	125	90		138
		Apr-July	118	90		131
0770	SHEEP CREEK W. Sulphur Springs (near)	Apr-Sept	26.0	158	28.1	16.5
		Apr-July	22.4	158	24.7	14.2
0775	SMITH RIVER Eden (near)	Apr-Sept	230	149		154
		Apr-July	212	149		142
0786	SUN RIVER Gibson Dam (at)(17)	Apr-Sept	520	85	747	610
		Apr-July	477	85	695	559
0905	BELT CREEK Monarch (near)	Apr-Sept	140	151		92.5
		Apr-July	128	151		84.1
0908	MISSOURI RIVER Fort Benton (at)(18)	Apr-Sept	3790	114		3319
		Apr-July	3220	114		2825
0920	TWO MEDICINE CREEK Browning (near)(19)	Apr-Sept	220	81	323	271
		Apr-July	211	81	311	260
0925	BADGER CREEK Browning (near)	Apr-Sept	116	81		143
		Apr-July	101	81		124
0990	CUT BANK CREEK Cut Bank (at)	Apr-Sept	100	76		131
		Apr-July	91.0	76		120

(15) Adjusted for storage in Middle Creek Reservoir.

(16) Adjusted for storage in Hebgen and Ennis Lakes and Clark Canyon Reservoir.

(17) Adjusted for storage in Gibson Reservoir and diversions.

(18) Adjusted for storage in Canyon Ferry Reservoir.

(19) Adjusted for storage in Two Medicine Res. & diversions into Two Medicine Canal.

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1968

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW	
					LAST YEAR*	AVERAGE
0995	MARIAS RIVER Shelby (near)(20)	Apr-Sept	500	77	791	651
		Apr-July	474	77	760	617
1095	MISSOURI RIVER Virgelle (at)(21)	Apr-Sept	4400	107		4116
		Apr-July	3810	107		3557
1098	S. FORK JUDITH RIVER Utica (near)	Apr-Sept	17.2	153		11.2
		Apr-July	15.5	153		10.1
1150	MISSOURI RIVER Zortman (near)(21)	Apr-Sept	4900	108		4508
		Apr-July	4200	108		3878
1155	N. FORK MUSSELSHELL RIVER Delpine (near)	Apr-Sept	7.5	125		6.0
		Apr-July	6.2	124		5.0
1185	S. FORK MUSSELSHELL RIVER Martinsdale (above)	Apr-Sept	60.0	123		48.8
		Apr-July	57.3	123		46.6
1320	MISSOURI RIVER Ft. Peck Dam (below)(22)	Apr-Sept	4700	106		4422
		Apr-July	4130	106		3894
1350	MILK RIVER Eastern Crossing (at)	Mar-Sept	220	81		272
1770	MISSOURI RIVER Wolf Point (near)(22)	Apr-Sept	5000	103		4879
		Apr-July	4450	103		4317
3300	MISSOURI RIVER Williston, N.D. (nr.)(29)	Apr-Sept	11500	104		11059
		Apr-July	10200	104		9828

SASKATCHEWAN RIVER BASIN

0175	ST. MARY RIVER Babb (near)(30)	Apr-Sept	415	85		491
		Apr-July	360	85		424

- (20) Adjusted for storage in Two Medicine, Four Horns, Lake Frances & Swift Reservoirs.
 (21) Adjusted for storage in Canyon Ferry and Tiber Reservoirs.
 (22) Adjusted for storage in Canyon Ferry, Tiber and Fort Peck Reservoirs.
 (29) Adjusted for storage in Canyon Ferry, Tiber, Fort Peck, Buffalo Bill, Boysen and Yellowtail Reservoirs.
 (30) Adjusted for storage in Lake Sherburne.

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1968

(1000 Acre Feet)

		FORECAST		FORECAST		PERCENT		MEASURED FLOW	
		PERIOD		THIS YEAR		AVERAGE		LAST YEAR*	
NO.		RIVER AND FORECAST POINT						AVERAGE	
YELLOWSTONE RIVER BASIN									
1915	YELLOWSTONE RIVER Corwin Springs (at)	Apr-Sept	1960	104	2370	1877			
		Apr-July	1640	104	2003	1572			
1925	YELLOWSTONE RIVER Livingston (near)	Apr-Sept	2330	109		2127			
		Apr-July	1930	109		1770			
1935	SHIELDS RIVER Clyde Park (at)	Apr-Sept	125	126		99.0			
		Apr-July	116	126		92.2			
2000	BOULDER RIVER Big Timber (at)	Apr-Sept	400	117		343			
		Apr-July	376	117		321			
2050	STILLWATER RIVER Absarokee (near)(25)	Apr-Sept	615	111		552			
		Apr-July	516	111		465			
2075	CLARKS FORK RIVER Chance (at)	Apr-Sept	638	109		583			
		Apr-July	586	109		528			
2085	CLARKS FORK RIVER Edgar (at)	Apr-Sept	660	109	837	609			
		Apr-July	580	108	757	538			
2095	ROCK CREEK Red Lodge (near)	Apr-Sept	115	112	138	103			
		Apr-July	89.2	112	108	79.6			
2145	YELLOWSTONE RIVER Billings (at)	Apr-Sept	4445	113	5611	3913			
		Apr-July	3800	113	4953	3362			
2870	BIG HORN RIVER St. Xavier (near)(26)	Apr-Sept	1500	90	2969	1677			
		Apr-July	1410	90	2789	1568			
2920	LITTLE BIG HORN RIVER Lodgegrass (near)(28)	Apr-Sept	120	122		98.4			
		Apr-July	105	122		86.2			
3090	YELLOWSTONE RIVER Miles City (at)(27)	Apr-Sept	6100	105		5778			
		Apr-July	5330	105		5080			
3295	YELLOWSTONE RIVER Sidney (near)(27)	Apr-Sept	6100	104		5850			
		Apr-July	5450	104		5230			

(25) Adjusted for storage in Mystic Lake.

(26) Adjusted for storage in Buffalo Bill, Boysen, Bull Lake and Yellowtail Reservoirs.

(27) Adjusted for storage in Buffalo Bill, Boysen and Yellowtail Reservoirs.

(28) Sum Little Big Horn below Pass Creek and Lodgegrass Creek near Wyola.

SNOW SURVEY DATA

AS OF MARCH 1, 1968

SNOW COURSE			CURRENT DATA			PAST RECORD (Inches)	
			DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
NO.	NAME	ELEVATION				LAST YEAR	AVERAGE

COLUMBIA RIVER BASIN

KOOTENAI RIVER

15B11	Baree Creek	5500	2/29	86	36.0	54.8	-
15B16	Baree Midway	4600	2/29	62	24.4	44.4	-
15B15	Baree Trail	3800	2/29	0	0.0	8.4	-
14A04	Brush Creek	5000	2/28	23	8.5	13.2	12.7*
BC 10	Fernie	3500	2/28	9	3.3	8.3	9.0
BC 12A	Field	4200	2/27	19	6.2	7.5	5.8
BC 11	Glacier	4100	2/27	72	26.8	37.5	24.0*
14A11	Graves Creek	4300	2/27	33	10.8	23.5	-
BC 43	Gray Creek	5100	2/29	45	12.7	16.7	16.7*
BC 33	Kicking Horse	5400	2/27	45	12.3	16.3	13.3
BC 20B	Kimberley	3800	2/28	20	6.1	6.9	8.4
BC 32	Marble Canyon	5000	2/27	45	10.1	17.5	13.5
BC 10B	Morrissey Ridge	6100	2/27	60	20.2	38.0	-
BC 10A	New Fernie	4100	2/28	28	10.3	18.1	13.2*
15A01	Red Mountain	6000	2/26	43	13.7	23.9	18.0
BC 8A	Sinclair Pass	4500	2/27	17	4.1	8.4	5.8*
BC 20A	Sullivan Mine	5100	2/29	40	12.5	14.1	13.4
BC 41	Upper Elk River	4400	2/28	11	4.8	10.5	7.9
14A07	Weasel Divide	5450	2/27	70	26.2	44.4	30.4*

FLATHEAD RIVER

14B03	Bassoo Peak	5150	2/26	21	7.4	11.2	11.1*
13A11	Beaver Lake	5900	2/27	54	19.1	25.4	19.0*
13B03	Big Creek	6750	2/28	94	36.2	48.4	38.5
13A17	Camp Misery	6400	2/29	97	37.3	59.7	33.0*
13A02	Desert Mountain	5600	3/1	39	12.6	17.8	14.1*
13B04	Fatty Creek	5500	2/28	44	17.0	26.2	18.0*
14A09	Griffin Creek Divide	5150	2/27	24	7.2	13.3	12.4*
13B12	Gunsight Lake	6300	2/27	93	34.5	51.8	35.5*
14A03	Hell Roaring Divide	5770	2/29	66	23.9	38.7	26.8*
13B13	Holbrook	4530	2/29	18	6.6	12.9	10.2*
14A06	Kishenehn	3890	2/28	19	6.1	9.8	9.9
14A05	Logan Creek	4300	2/28	18	6.3	7.9	8.8*
13A05	Marias Pass	5250	2/27	34	12.2	21.3	17.3
13A16	Mineral Creek	4000	2/26	38	12.0	23.0	19.8
13B07	North Fork Jocko	6330	2/29	97	36.3	49.8	39.8
13B02	Spotted Bear Mountain	7000	2/27	35	12.2	19.3	14.6
13B01	Trinkus Lake	6100	2/27	89	33.8	48.1	36.3*
13B11	Twin Creeks	3580	2/27	18	6.6	14.6	12.4*
13B05	Upper Holland Lake	6200	2/29	85	31.4	39.5	29.8*

SNOW SURVEY DATA

AS OF MARCH 1, 1968

SNOW COURSE			CURRENT DATA			PAST RECORD	
			DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
NO.	NAME	ELEVATION				LAST YEAR	AVERAGE

CLARK FORK RIVER

13C13	Black Pine	7100	2/29	41	13.0	14.8	11.3*
13C13	Black Pine Pillow	7100	2/29	SP	13.4	13.9	-
12B10	Copper Creek	5700	3/1	29	9.8	20.0	13.8*
12B11	Cotter Mine	6250	3/1	34	10.8	22.4	15.3*
13B10	Coyote Hill	4200	2/28	19	6.1	12.0	10.2
13C09	El Dorado Mine	7800	3/1	62	20.9	19.2	17.6*
13C11	Fred Burr Pass	8000	2/29	77	26.4	24.7	23.8*
13C10	Gold Creek Lake	7200	3/1	44	14.2	28.0	13.4*
14C10	Heart Lake Trail	4800	2/29	40	15.3	28.0	-
15C10	Hoodoo Basin	6000	2/29	110	41.9	47.3	-
15C10	Hoodoo Basin Pillow	6000	2/29	SP	40.6	46.0	-
15C01	Hoodoo Creek	5900	2/29	99	36.7	46.1	45.3*
13C04	Intergaard	6450	3/1	26	8.3	8.6	7.2
15B02	Lookout	5250	2/28	70	26.5	35.6	34.8*
13C21	Lubrecht Forest No. 3	5450	3/3	16	4.7	7.0	7.4*
13C22	Lubrecht Forest No. 4	4650	3/3	6	1.9	3.0	3.9*
13C08	Lubrecht Forest No. 6	4040	3/3	2	0.6	3.8	4.6*
13C12	Red Lion	7100	2/29	56	17.6	15.0	13.8*
13C03	Skalkaho Summit	7260	2/27	77	25.2	33.1	22.5*
13C02	Slide Rock Mountain	7100	2/28	41	13.4	12.6	12.6*
13C05	Southern Cross	6500	3/1	19	6.8	8.2	5.6
13C18	Spring Gulch	6000	3/2	31	10.6	10.7	10.5*
13C07	Storm Lake	7780	2/26	49	14.3	12.5	11.7*
13C06	Stuart Mill	6500	3/1	22	7.4	7.2	5.9
13C01	Stuart Mountain	7400	3/2	79	30.2	31.2	26.5*
14B01	TV Mountain	6800	3/3	46	15.5	16.0	14.9*

BITTERROOT RIVER

13C16	Ambrose	6480	2/25	36	11.0	12.9	12.1*
13D01	East Fork R. S.	5400	3/1	19	6.4	6.5	7.1*
13D02	Gibbons Pass	7100	2/27	71	21.1	21.2	21.0
14C05	Lolo Pass	5230	2/26	66	23.6	31.3	32.2*
14C07	Lost Horse	5940	2/26	72	25.8	31.6	30.3*
13D16	Moose Creek	6200	2/26	47	13.4	16.0	14.9
14D02	Nez Perce Camp	5680	2/27	32	9.1	16.5	12.8*
14D01	Nez Perce Pass	6570	2/27	44	14.8	16.8	14.8*
13D22	Saddle Mountain	7940	3/1	77	24.5	24.2	-
13D22	Saddle Mountain Pillow	7940	3/1	SP	24.5	-	-
14C04	Savage Pass	6600	2/26	70	24.0	26.0	25.0*
14C13	Twelvemile Creek	5600	2/26	44	15.7	-	-
14C13	Twelvemile Creek Pillow	5600	2/26	SP	22.3	-	-
14C08	Twin Lakes	6510	2/26	107	37.0	39.8	39.5*
14C12	Twin Lakes Pillow	6400	2/26	SP	34.3	-	-

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SP - Snow pillow observation - water content only.

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

AS OF MARCH 1, 1968

SNOW COURSE			CURRENT DATA			PAST RECORD	
			DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
NO.	NAME	ELEVATION				LAST YEAR	AVERAGE

MISSOURI RIVER BASIN

BEAVERHEAD RIVER

13D10	Bloody Dick	7600	2/26	40	10.0	10.6	9.6
12E03	Camp Creek	6800	2/27	30	9.0	10.0	8.7
12D04	Carter Creek	7400				-	4.0*
13E22	Dad Creek Lake	8400	2/27	45	12.2	12.1	10.0*
13D15	Elk Horn Springs	7800	2/27	38	9.1	8.1	8.8
13D09	Gold Stone	8100	2/26	53	14.2	13.8	12.4
11E12	Kilgore	6200	2/27	33	10.5	10.0	8.8
11E04	Lakeview Canyon	6930	3/4	35	11.9	13.0	9.6
11E03	Lakeview Ridge	7400	3/4	31	9.9	11.8	8.1
13E01	Lemhi Pass	7480	2/27	35	9.8	7.2	7.1
13E23	Lemhi Ridge	8100	2/27	35	9.2	8.0	-
13E02	Trail Creek	7090	2/27	31	8.0	7.1	6.4
12E01	White Pine Ridge	8850	2/27	26	6.4	3.4	4.4

RUBY RIVER

11D14	Branham Lakes	8850	2/24	84	29.6	26.0	-
11D08	Clover Meadow	8600	2/28	57	18.2	14.0	12.0*
12E07	Divide	7900	2/28	35	9.0	9.8	8.0*
11D15	Middle Mill Creek	7850	2/24	53	15.0	11.0	-
12E06	Notch	8500	2/28	48	15.1	11.9	10.2*
12D05	Smuggler Mine	6960	2/24	36	9.4	-	-

BIG HOLE RIVER

13D20	Abundance Lake	8800	2/27	63	18.8	17.0	16.1*
13D19	Darkhorse Lake	8600	2/28	76	25.2	23.8	22.5*
13D21	Foolhen	8280	2/27	58	18.6	15.4	14.0*
13D08	Jahnke Creek	7340	2/26	32	8.3	8.9	8.8
13D24	Slag-A-Melt Lake	8750	2/28	71	22.0	-	-

JEFFERSON RIVER

12C07	Berry Meadow	7300	3/1	27	7.6	9.0	6.5*
12C09	Copper Mountain	7700	2/29	42	11.4	10.3	-
12C10	Nez Perce Creek	6500	2/29	24	6.7	7.2	-
12C06	Picnic Grounds	6500	3/1	16	4.4	5.6	4.2*
12D01	Pipestone Pass	7200	2/28	19	4.6	5.0	4.5
12C11	Rocker Peak	8000	3/1	48	15.1	-	-
12C11	Rocker Peak Pillow	8000	3/1	SP	14.6	-	-

SP - Snow pillow observation - water content only.

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NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

AS OF MARCH 1, 1968

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
						LAST YEAR	AVERAGE
<u>MADISON RIVER</u>							
LE09	Big Springs	6500	2/28	51	16.8	23.1	19.6
LD07	Call Road	8050	2/28	39	11.4	10.0	8.0*
LD12	Four Mile	6900	2/29	27	7.9	5.3	7.0*
LE05	Hebgen Dam	6550	2/24	47	13.8	12.3	10.8
LE10	Island Park	6315	2/28	44	12.9	17.2	15.3
LD05	Jack Creek	7500	2/28	25	6.4	5.0	5.0*
LE22	Lake Creek	6100	2/29	28	8.2	8.4	-
LE28	Lion Mountain	8760	2/27	59	16.8	16.0	-
LE28	Lion Mountain Pillow	8760	2/27	SP	15.6	16.1	-
LD11	Lower Twin	7900	2/29	61	20.8	16.6	16.0*
LE31	Madison Plateau	7750	3/4	49	17.1	-	-
LE31	Madison Plateau Pillow	7750	3/4	SP	18.5	-	-
LE23	Meridian Creek	7000	2/29	33	8.8	8.8	-
DE02	Norris Basin	7500	2/27	44	9.2	12.4	9.0*
LD03	North Meadow	7500	2/29	26	7.2	6.8	7.3*
LE21	Potomageton Park	7150	2/29	49	15.8	16.1	-
LE20	Sentinel Creek	8300	2/29	73	24.4	26.1	-
LE24	Tepee Creek	8000	2/28	46	12.8	14.1	-
LE08	Valley View	6500	2/28	51	16.9	22.2	13.2
LE07	West Yellowstone	6700	2/25	37	10.8	14.7	10.6
LE07	West Yellowstone Pillow	6700	2/28	SP	7.3	10.9	-
LE30	Whiskey Creek	6800	2/28	54	17.3	20.4	-

LLATIN RIVER

DL14	Arch Falls	7350	2/29	46	15.0	12.2	9.5*
DO9	Bear Basin	8150	2/27	72	24.9	19.7	16.3*
DL15	Bridger Bowl	7250	2/28	87	32.2	28.3	22.0*
DL15	Bridger Bowl Pillow	7250	2/28	SP	27.3	27.2	-
LE29	Carrot Basin	9000	2/20	90	29.2	37.4	-
LE29	Carrot Basin Pillow	9000	2/20	SP	21.8	30.6	-
DD04	Devil's Slide	8100	2/29	76	26.4	21.4	17.4
DD03	Hood Meadow	6600	2/29	34	11.3	9.8	7.6
OD13	Lick Creek	6860	2/29	38	11.4	11.5	-
OD13	Lick Creek Pillow	6860	2/29	SP	11.3	11.5	-
OD10	Little Park	7400	2/27	60	19.6	15.6	11.4*
OD18	Maynard Creek	6210	2/28	52	19.8	15.7	-
OD18	Maynard Creek Pillow	6210	2/28	SP	12.5	11.4	-
OD01	New World	6700	2/28	39	13.2	11.9	8.6
OD16	Shower Falls	8100	2/29	84	30.7	24.3	-
OD16	Shower Falls Pillow	8100	2/29	SP	26.2	22.0	-
LE06	Twenty-One Mile	7150	2/25	54	16.3	21.5	15.8

SP - Snow pillow observation - water content only.

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NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE

No.	Year	Volume	Page	Title	Author	Editor	Reviewer	Notes
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1	1891	1	1-10	The History of the British Isles	H. H. H.	J. J. J.	K. K. K.	L. L. L.
2	1892	2	11-20	The History of the British Isles	H. H. H.	J. J. J.	K. K. K.	L. L. L.
3	1893	3	21-30	The History of the British Isles	H. H. H.	J. J. J.	K. K. K.	L. L. L.
4	1894	4	31-40	The History of the British Isles	H. H. H.	J. J. J.	K. K. K.	L. L. L.
5	1895	5	41-50	The History of the British Isles	H. H. H.	J. J. J.	K. K. K.	L. L. L.
6	1896	6	51-60	The History of the British Isles	H. H. H.	J. J. J.	K. K. K.	L. L. L.
7	1897	7	61-70	The History of the British Isles	H. H. H.	J. J. J.	K. K. K.	L. L. L.
8	1898	8	71-80	The History of the British Isles	H. H. H.	J. J. J.	K. K. K.	L. L. L.
9	1899	9	81-90	The History of the British Isles	H. H. H.	J. J. J.	K. K. K.	L. L. L.
10	1900	10	91-100	The History of the British Isles	H. H. H.	J. J. J.	K. K. K.	L. L. L.

SNOW SURVEY DATA

AS OF MARCH 1, 1968

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
						LAST YEAR	AVERAGE

MISSOURI RIVER (Main Stem)

9A02	Bear Paw Ski Area	5200	3/1	23	7.2	-	-
11C01	Boulder Mountain	7950	2/27	56	17.5	21.1	12.5*
12C05	Chessman Reservoir	6200	2/28	16	5.8	4.5	4.0
10C09	Deadman Creek	6450	2/29	39	10.8	14.0	-
10C09	Deadman Creek Pillow	6450	2/29	SP	10.4	-	-
10C07	Elk Peak	8000	2/28	52	15.8	18.8	13.3*
10C02	Grasshopper	7000	2/28	24	6.6	4.2	4.3
10C01	Kings Hill	7500	2/26	47	14.0	16.0	11.0
9A01	Rocky Boy	4700	3/1	15	5.3	6.6	4.2
9A01	Rocky Boy Pillow	4700	3/1	SP	2.6	-	-
12C01	Stemple Pass	6600	2/29	28	8.9	12.6	9.2
12C02	Ten Mile Lower	6600	2/27	25	8.2	7.3	6.3
12C03	Ten Mile Middle	6800	2/26	36	11.0	10.3	9.1
12C04	Ten Mile Upper	8000	2/26	45	15.1	12.8	11.7

SUN-TETON-MARIAS RIVERS

13A15	Badger Pass	6900	No Measurement			42.5	31.0*
12B06	Cabin Creek	5200	2/29	18	6.6	12.4	6.8*
12B09	Five-Bull	5700	2/29	18	6.2	9.2	6.1*
12A01	Freight Creek	6000	2/29	32	12.0	18.8	14.5
12B07	Goat Mountain	7000	2/29	27	7.8	12.0	10.6
12B04	Wrong Creek	5700	3/2	32	11.2	20.0	14.5*
12B03	Wrong Ridge	6800	3/2	46	15.7	25.7	19.6*

JUDITH RIVER

9C02	Avalanche	7100	3/1	67	25.0	24.0	-
9C01	Crystal Lake	6100	3/1	42	15.0	14.4	10.5
9C03	Rock Creek	5600	3/1	33	10.4	10.1	-
10C06	Spur Park	8000	2/29	63	20.2	22.8	16.0*
10C06	Spur Park Pillow	8000	2/29	SP	20.4	24.8	-

MILK RIVER

10AA2	Cress Day B	3450	2/27	0	0.0	2.6	1.3*
9AA1	Cypress Park C	4000	2/27	8	3.8	5.3	4.1*
10AA1	Elkwater Lake A	4100	2/27	4	1.6	2.8	2.0*
7AA1	Val Marie D	2700	2/28	0	0.0	2.4	1.1*

SP - Snow pillow observation - water content only.

Vol. 100, Part 1, 1970

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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SNOW SURVEY DATA

AS OF MARCH 1, 1968

SNOW COURSE			CURRENT DATA			PAST RECORD	
			DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
NO.	NAME	ELEVATION				LAST YEAR	AVERAGE

ST. MARY RIVER

13A18	Hudson Bay Divide	5800	2/28	42	15.2	20.9	16.8*
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SASKATCHEWAN (BOW) RIVER

Alb. 1	Bow River	5100	2/27	28	6.4	13.8	-
Alb. 2	Upper Pipestone	5300	2/27	27	6.4	14.5	-
Alb. 6	Mirror Lake	6600	2/28	35	9.3	16.2	-
Alb. 8	Chateau Lawn	5700	2/28	35	8.0	14.1	-
Alb. 10	Mount Eisenhower	5000	2/27	15	3.3	6.8	-

UPPER YELLOWSTONE RIVER

10C05	Bald Ridge	7500	2/26	42	11.8	10.6	9.2*
9D01	Camp Senia	7890	3/4	27	7.0	7.6	4.8*
10E03	Canyon	7750	2/28	53	14.7	16.5	13.1
9D07	Cooke Station	8150	2/29	60	18.2	20.5	-
10D05	Crevice Mountain	8400	2/28	43	13.5	10.0	7.5
10E06	East Entrance	7000	2/25	28	6.1	9.0	10.4*
9D06	Fisher Creek	9100	2/29	95	32.0	39.8	-
9D06	Fisher Creek Pillow	9100	2/29	SP	29.9	38.1	-
9D05	Grizzly Peak	8400	3/1	52	15.0	14.6	10.1*
10D06	Independence	8000	3/1	59	18.8	22.7	15.6*
10E04	Lake Camp	7850	2/28	31	6.7	11.2	9.0
9E01	Lodgepole	8200	2/29	35	8.6	11.4	8.6*
10E06	Lupine Creek	7300	2/25	37	10.0	13.5	9.5
10D12	Monument Peak	9000	3/1	75	26.2	29.2	18.1*
10D07	Northeast Entrance	7400	2/27	33	9.0	11.0	7.5
10D07	Northeast Entrance Pillow	7350	2/27	SP	8.7	9.9	-
10C03	Porcupine R. S.	6500	2/26	25	7.6	6.2	6.3
10D10	Sacajawea	6550	2/28	49	16.4	13.4	11.1*
10C08	South Fork Shields	8100	2/26	70	22.6	23.4	-
10E05	Sylvan Pass	7100	2/25	42	10.8	12.0	12.6
10E07	Thumb Divide	7900	2/27	54	16.5	22.3	20.0
9D04	Timberline Creek	8850	3/4	50	15.0	17.8	10.9*
9D02	West Rosebud	7500				15.0	-
9D08	White Mill	8700	2/29	76	23.4	29.5	-

SP - Snow pillow observation - water content only.

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SOIL MOISTURE DATA

AS OF MARCH 1, 1968

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE

COLUMBIA RIVER BASIN

Kootenai

15B15M	Baree Trail	3800	48	7.5	3/1	6.5	6.4	-
14A10M	Murphy Lake R. S.	3000	48	22.6	3/4	21.1	20.8	-
15A02M	Raven R. S.	3050	48	23.0	3/1	19.8	22.2	-

Flathead

13A02M	Desert Mountain	5600	54	8.4			8.0	7.2
13A05M	Marias Pass	5250	54	6.5	3/1	5.6	5.5	5.3

Clark Fork

13C13M	Black Pine	7100	48	10.0	2/29	8.1	8.0	-
13B19M	Seeley Lake R. S.	4030	48	11.9			10.3	-
13C03M	Skalkaho Summit	7260	48	10.8	2/27	9.9	9.9	-

Bitterroot

13D18M	Gibbons Pass	7100	48	7.1	3/1	5.5	4.8	5.3
14C05M	Lolo Pass	5250	48	10.6	2/28	10.0	3.8	5.8

MISSOURI RIVER BASIN

Beaverhead

11E13M	Lakeview	6700	48	15.3	3/1	6.8	6.5	8.4
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Madison

10D04M	Red Bluff	4800	40	4.7	3/1	2.4	2.5	2.3
11E07M	West Yellowstone	6700	48	6.5	2/28	2.2	2.5	-

Gallatin

10D15M	Bridger Bowl	7250	48	17.0	2/28	16.0	15.9	-
11D02M	College Site	4856	54	14.5	3/1	12.9	12.5	9.7
10D13M	Lick Creek	6860	48	18.8	2/29	18.0	18.6	-
11E06M	Twenty-One Mile	7150	48	10.0	2/27	3.0	2.8	2.8

Missouri Main Stem

10C01M	Kings Hill	7420	48	11.8	2/29	6.2	4.9	7.3
13C08M	Stemple Pass	6350	48	5.9	2/28	4.3	4.0	4.1

Yellowstone

10D11M	Battle Ridge	6020	48	17.6	2/26	14.6	13.9	13.0
10D07M	Northeast Entrance	7350	48	9.4	2/27	5.0	4.2	6.5

**AVERAGE FOR PERIOD OF RECORD

RESERVOIR STORAGE DATA

AS OF FEBRUARY 29, 1968

(1000 Acre Feet)

		USEABLE STORAGE			
BASIN	RESERVOIR	USEABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
COLUMBIA RIVER BASIN					
Flathead	Hungry Horse	3,428.0	2,097.0	1,746.0	2,436.3**
	Flathead Lake	1,791.0	1,087.0	1,049.0	845.1
	Camas (Sum of 4)	45.2	23.5	26.0	32.2
	Mission Valley (Sum of 8)	100.3	26.5	25.1	34.5
Clark Fork	Georgetown Lake	31.0	26.8	20.0	23.2
	Noxon Rapids	334.6	324.0	267.0	-
Bitterroot	Como	34.9	18.2	10.0	11.8
	Painted Rocks	31.7	22.1	15.1	13.5**
MISSOURI RIVER BASIN					
Beaverhead	Clark Canyon	328.9	158.5	107.9	-
	Lima	84.0	42.5	14.0	26.1
Ruby	Ruby	38.8	-	-	23.0**
Madison	Hebgen Lake	377.5	237.0	170.4	179.1
	Ennis Lake	41.0	35.7	39.7	37.3
Gallatin	Middle Creek	8.0	3.3	3.0	3.6**
Missouri	Canyon Ferry	2,043.0	1,663.0	1,166.0	1,514.9**
	Hauser & Helena	61.9	61.3	61.9	53.9
	Lake Helena	10.4	10.2	10.4	7.8
	Holter Lake	81.9	80.3	81.1	50.7
	Smith River	10.7	8.9	-	5.6**
	Ackley Lake	5.8	-	-	3.5
	Durand	7.0	5.5	-	4.2**
	Martinsdale	23.1	9.9	-	8.0**
	Deadman's Basin	72.2	60.2	-	39.8**
	Fort Peck	19,410.0	15,970.0	15,460.0	10,595.1
	Gibson	105.0	35.1	21.9	58.5
	Willow Creek	32.3	12.2	16.4	19.6
	Pishkun	32.0	16.6	16.0	18.4
	varias	Lower Two Medicine	-	-	-
Four Horns		19.2	-	11.8	10.5
Swift		30.0	12.7	-	22.0
Lake Frances		112.0	70.7	-	91.8
ilk	Tiber	1,347.0	431.5	466.4	629.4**
	Fresno	127.2	67.9	84.4	58.6
	Nelson	66.8	39.6	49.0	35.4
	Lake Sherburne	66.1	27.8	-	21.6
Yellowstone	Mystic Lake	20.8	10.4	7.7	7.8
	Tongue River	68.0	50.7	-	13.1
	Cooney	27.5	-	15.8	11.1**
Big Horn	Yellowtail	1,356.0	773.6	651.6	-

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

**AVERAGE FOR PERIOD OF RECORD

Agencies and Organizations Cooperating in Montana Snow Surveys

U. S. Forest Service
Region I, Missoula, Montana
Montana Forests and Ranger
Districts

U. S. Geological Survey
Helena, Montana
Portland, Oregon

U. S. Army Corps of Engineers
Portland, Oregon
Seattle, Washington
Walla Walla, Washington
Omaha, Nebraska

U. S. Indian Irrigation Service
St. Ignatius, Montana

U. S. Weather Bureau
Helena, Montana
Portland, Oregon
Kansas City, Missouri

U. S. Bureau of Sports Fisheries
and Wildlife
Red Rock Lakes Refuge
Monida, Montana

U. S. Bureau of Reclamation
Billings, Montana
Boise, Idaho

U. S. Bonneville Power Administration
Portland, Oregon

U. S. Soil Conservation Service
Montana, Wyoming, Idaho

Soil and Water Conservation Districts
Montana Counties

U. S. National Park Service
Yellowstone National Park
Glacier National Park

Montana Power Company
Butte, Montana

Montana Water Resources Board
Helena, Montana

North Montana Branch Station
Agricultural Experiment Station
Havre, Montana

Montana State University
Agricultural Experiment Station
Bozeman, Montana

University of Montana
School of Forestry
Missoula, Montana

Water Rights Branch, Dept. of
Lands and Forests
Victoria, British Columbia

Department of Energy, Mines and
Resources
Calgary, Alberta

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supply, hydro-electric power
generation, navigation,
mining and industry

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with the Snow Survey"*